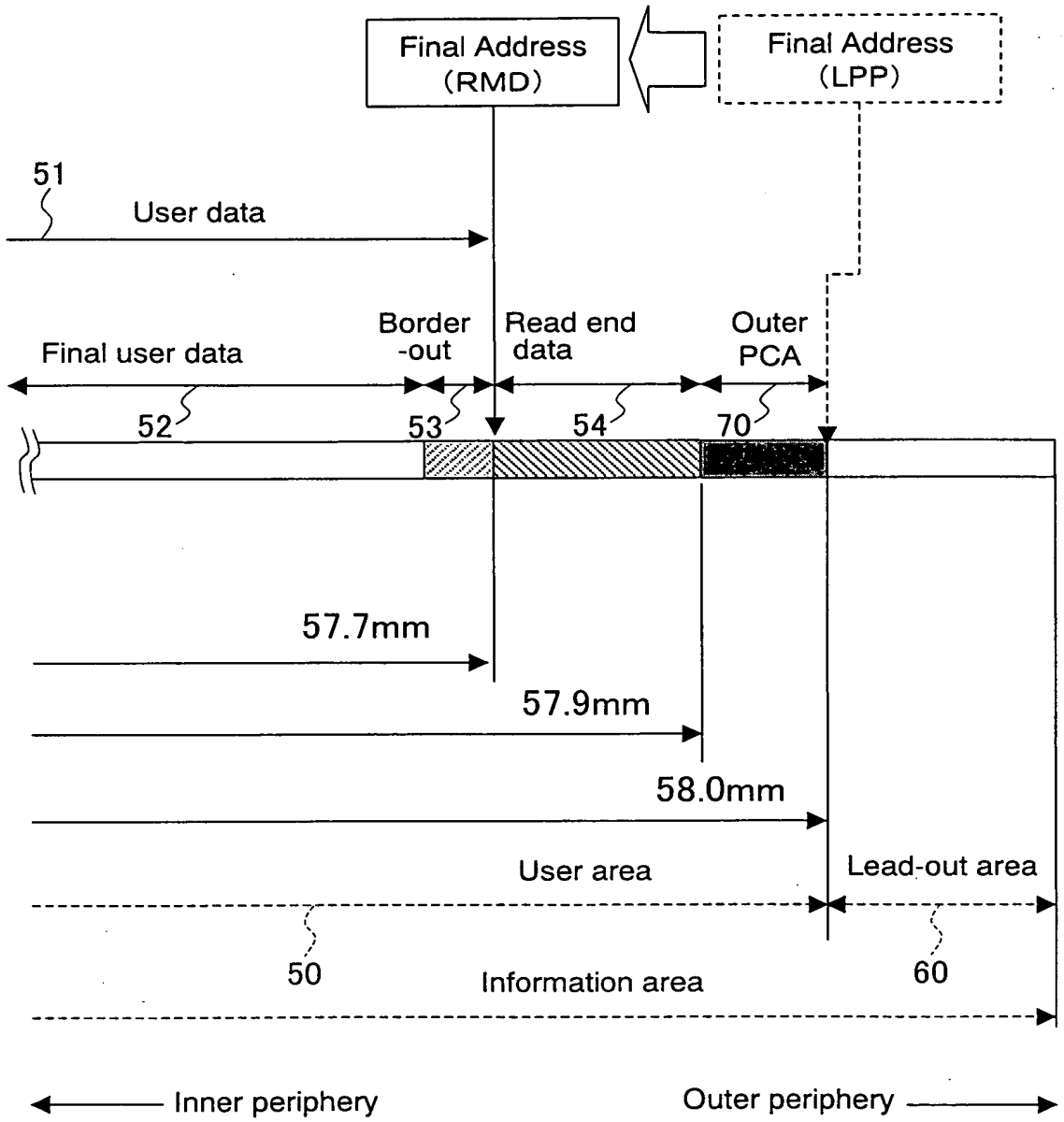

Final Address
(RMD)
Final Address
(LPP)
51
User data
Final user data
Border
-out
Read end
data
Outer
PCA
52
53
54
70
57.7mm
57.9mm
58.0mm
User area
Lead-out area
50
60
Information area
Inner periphery
Outer periphery

FIG. 1

FIG. 2A

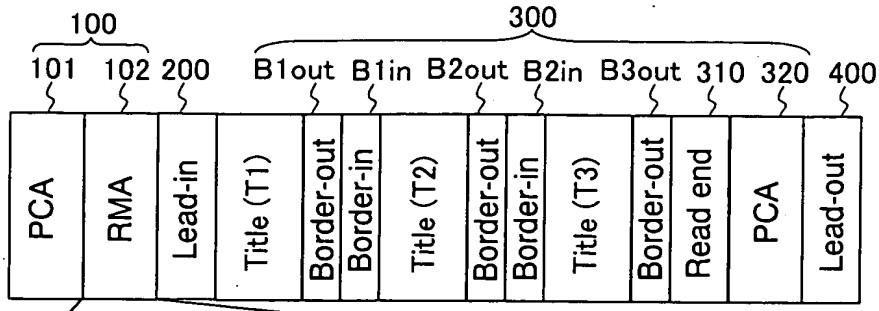


FIG. 2B

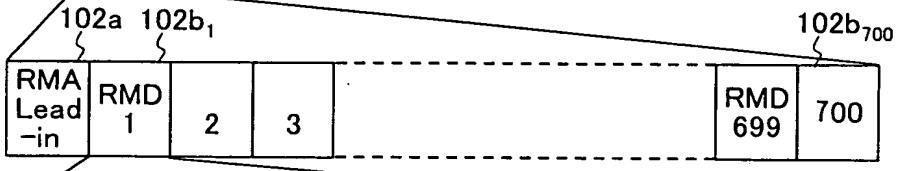


FIG. 2C

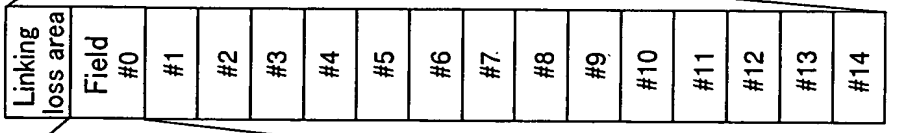


FIG. 2D

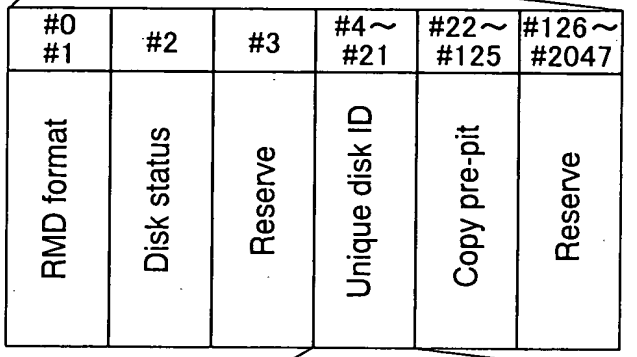
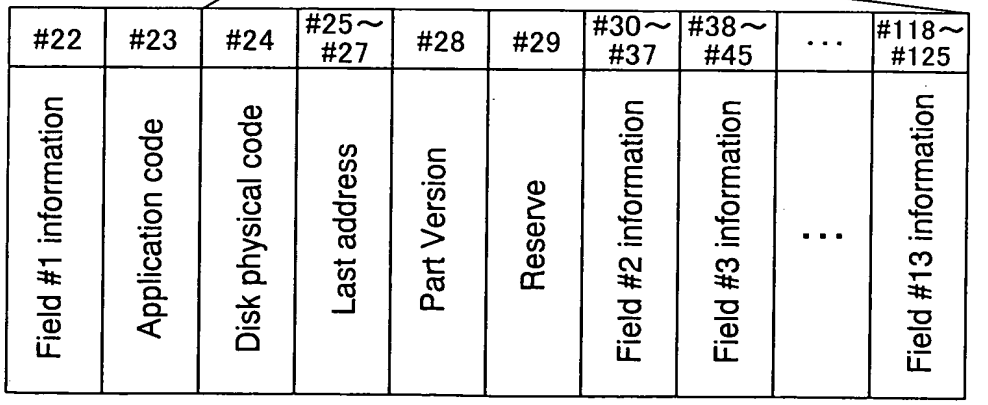


FIG. 2E



Case	First recording drive	Second recording drive	Recordable area
1	Use Outer PCA	Use Outer PCA	Modify using first recording drive
2	Use Outer PCA	Use only Inner PCA	
3	Use only Inner PCA	Use Outer PCA	Modify using second recording drive
4	Use only Inner PCA	Use only Inner PCA	Same as LPP field

FIG. 3

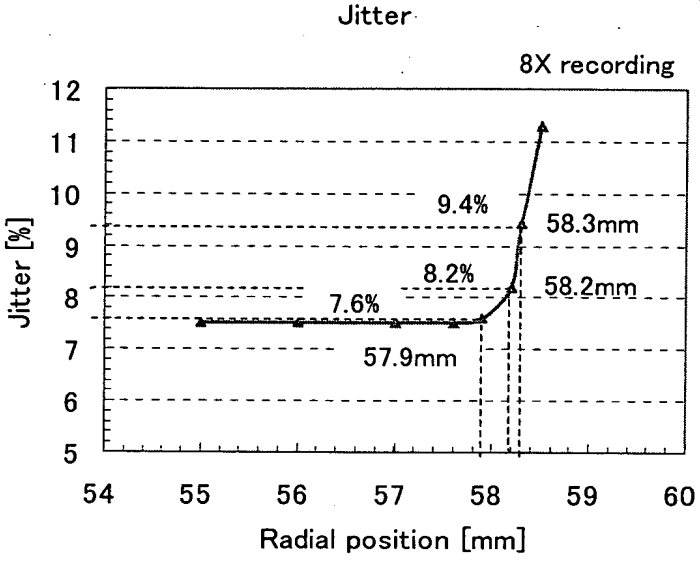

Jitter
8X recording
12
11
10
9
8
7
6
5
Jitter [%]
9.4%
58.3mm
8.2%
58.2mm
7.6%
57.9mm
54
55
56
57
58
59
60
Radial position [mm]

FIG. 4A

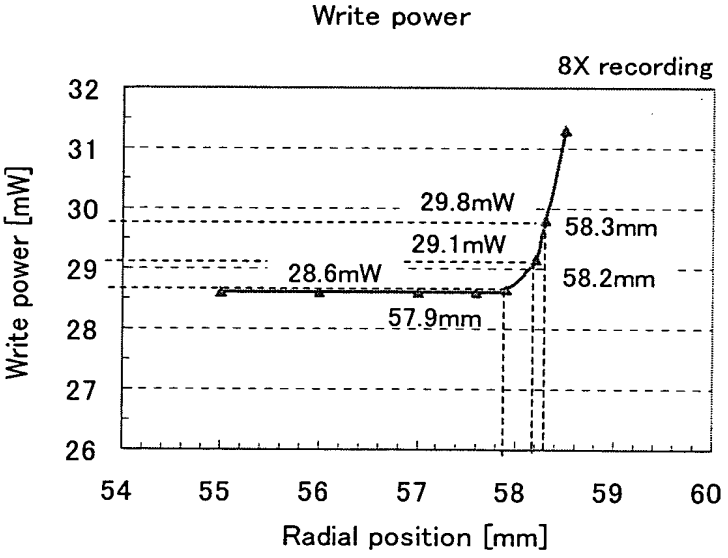

Write power
8X recording
32
31
30
29
28
27
26
Write power [mW]
29.8mW
58.3mm
29.1mW
28.6mW
58.2mm
57.9mm
54
55
56
57
58
59
60
Radial position [mm]

FIG. 4B

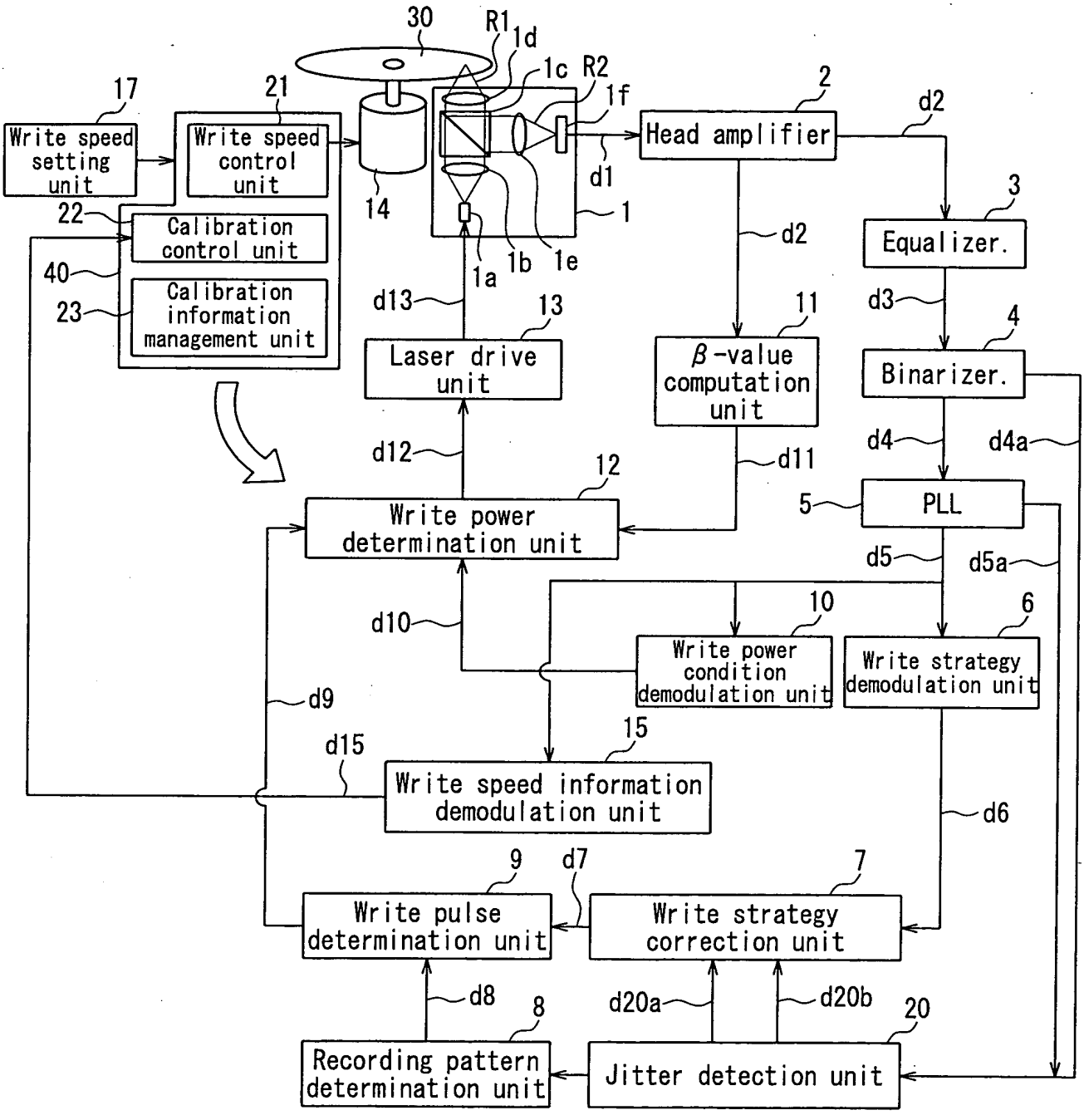

30
R1
1d
1c
R2
1f
17
21
2
d2
Write speed setting unit
Write speed control unit
Head amplifier
d1
14
1
22
Calibration control unit
d2
3
Equalizer.
40
23
Calibration information management unit
1a
1b
1e
d13
13
11
d3
4
Laser drive unit
β-value computation unit
Binarizer.
d12
d11
d4
d4a
12
5
PLL
Write power determination unit
d5
d5a
d10
10
6
Write power condition demodulation unit
Write strategy demodulation unit
d9
d15
15
Write speed information demodulation unit
d6
9
d7
7
Write pulse determination unit
Write strategy correction unit
d8
8
d20a
d20b
20
Recording pattern determination unit
Jitter detection unit

FIG. 5

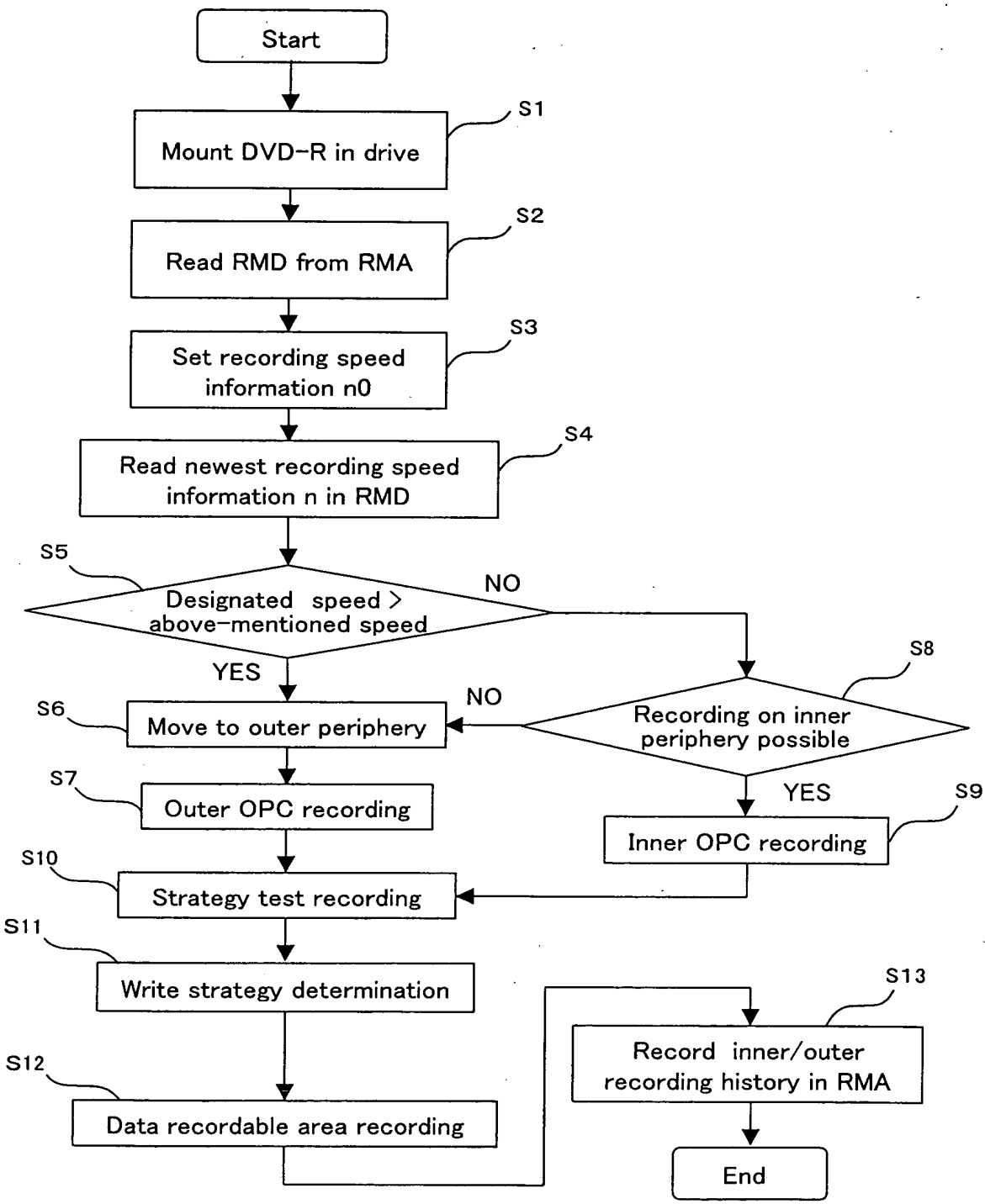

Start
Mount DVD-R in drive
S1
Read RMD from RMA
S2
Set recording speed information n0
S3
Read newest recording speed information n in RMD
S4
S5
Designated speed > above-mentioned speed
NO
YES
S8
Recording on inner periphery possible
NO
S6
Move to outer periphery
YES
S9
Inner OPC recording
S7
Outer OPC recording
S10
Strategy test recording
S11
Write strategy determination
S13
Record inner/outer recording history in RMA
S12
Data recordable area recording
End

FIG. 6

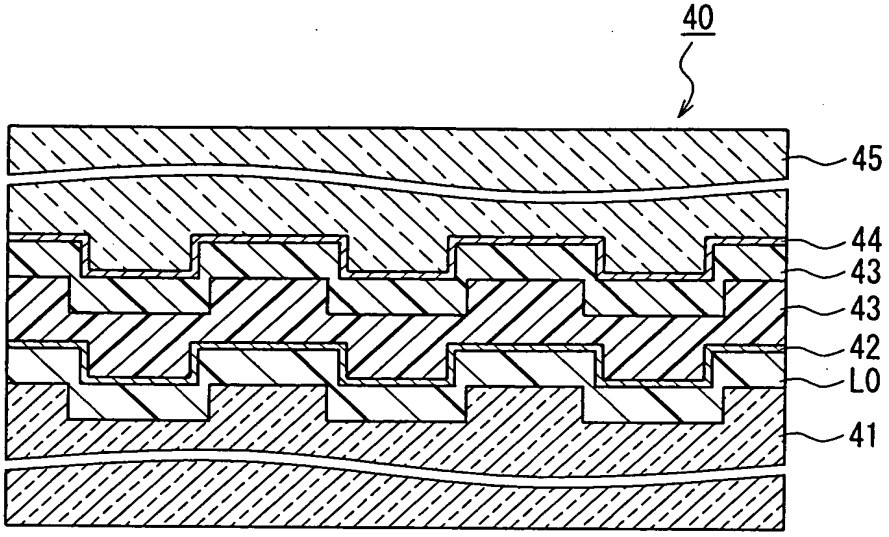


FIG. 7

FIG. 8A

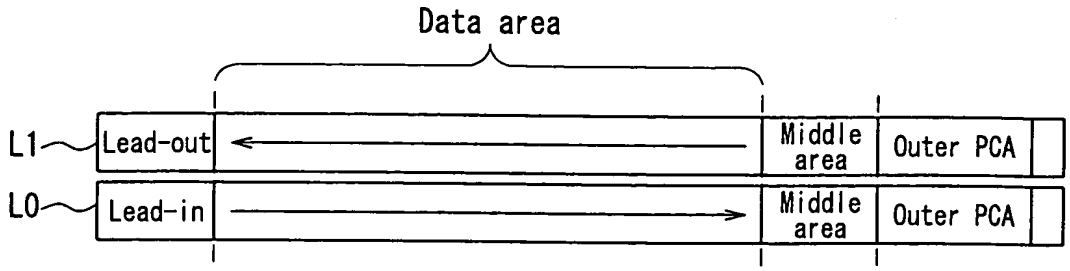


FIG. 8B

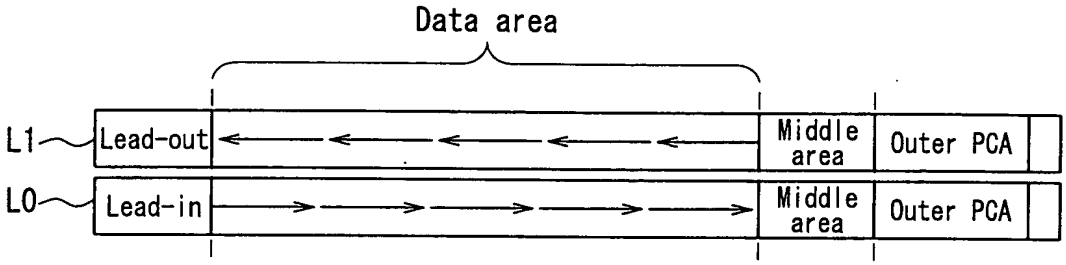


FIG. 8C

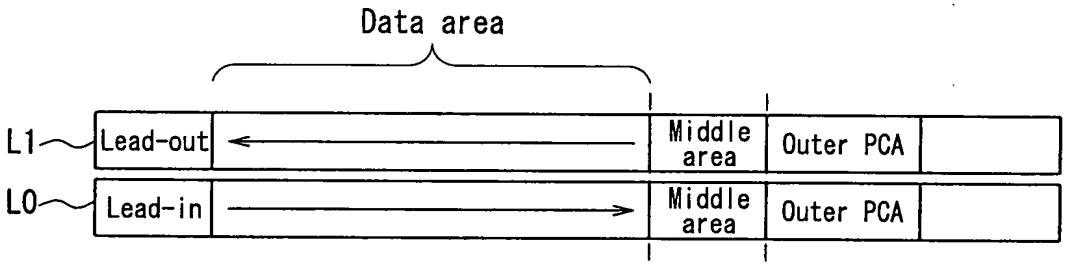


FIG. 8D

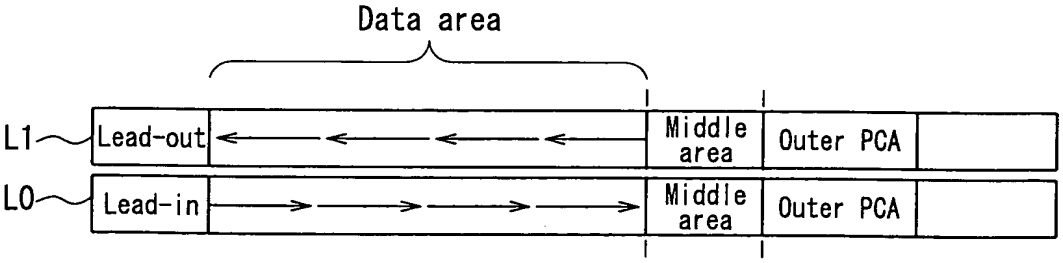
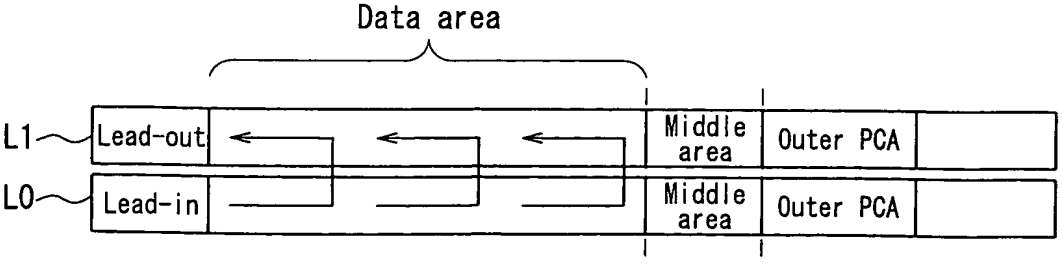


FIG. 8E



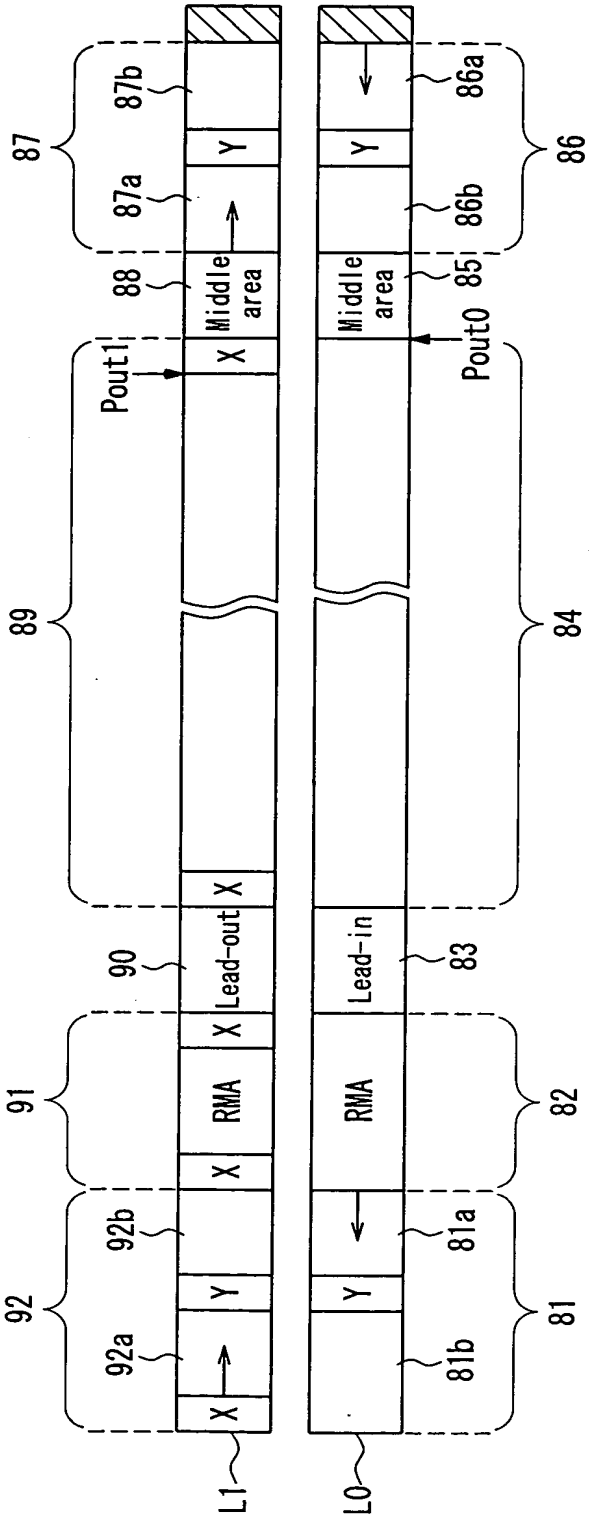

87
87b
Y
87a
88
Middle area
Pout1
X
89
X
90
Lead-out
X
91
RMA
X
92
92b
Y
92a
X
L1
86a
Y
86
86b
85
Middle area
Pout0
84
Lead-in
83
RMA
82
81a
Y
81
81b
L0

FIG. 9

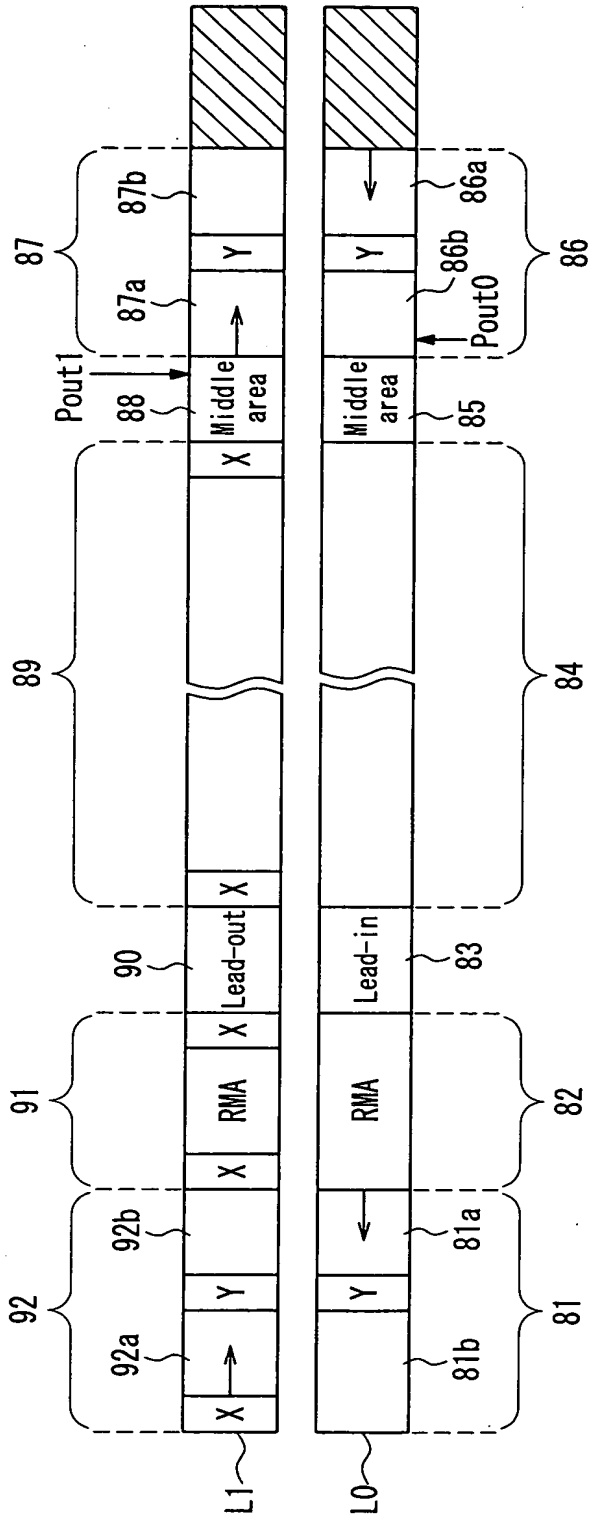

87
87b
87a
Y
Pout1
88
Middle area
X
89
X
90
Lead-out
X
91
RMA
X
92
92b
Y
92a
X
L1
86a
Y
86b
Pout0
86
Middle area
85
84
Lead-in
83
RMA
82
81a
Y
81b
81
L0

FIG. 10

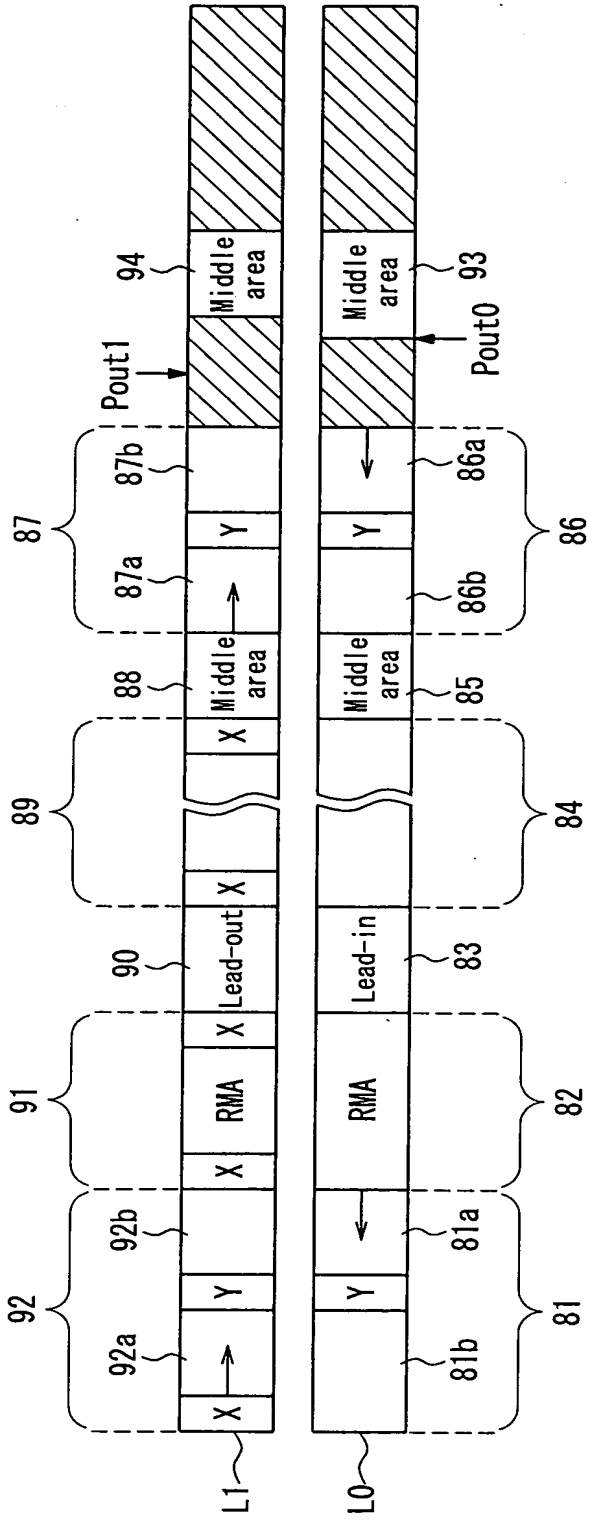

L1
L0
92
92a
92b
91
RMA
90
Lead-out
89
88
Middle area
87
87a
87b
Pout1
94
Middle area
86
86a
86b
Pout0
93
Middle area
85
84
Lead-in
83
82
81
81a
81b
X
Y

FIG. 11

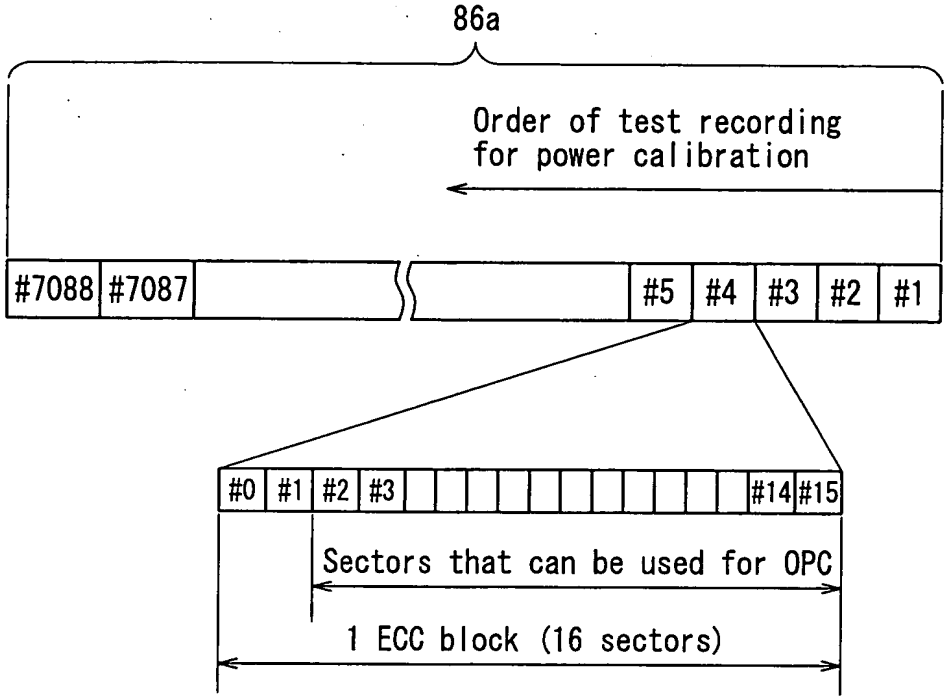

86a
Order of test recording
for power calibration
#7088
#7087
#5
#4
#3
#2
#1
#0
#1
#2
#3
#14
#15
Sectors that can be used for OPC
1 ECC block (16 sectors)

FIG. 12

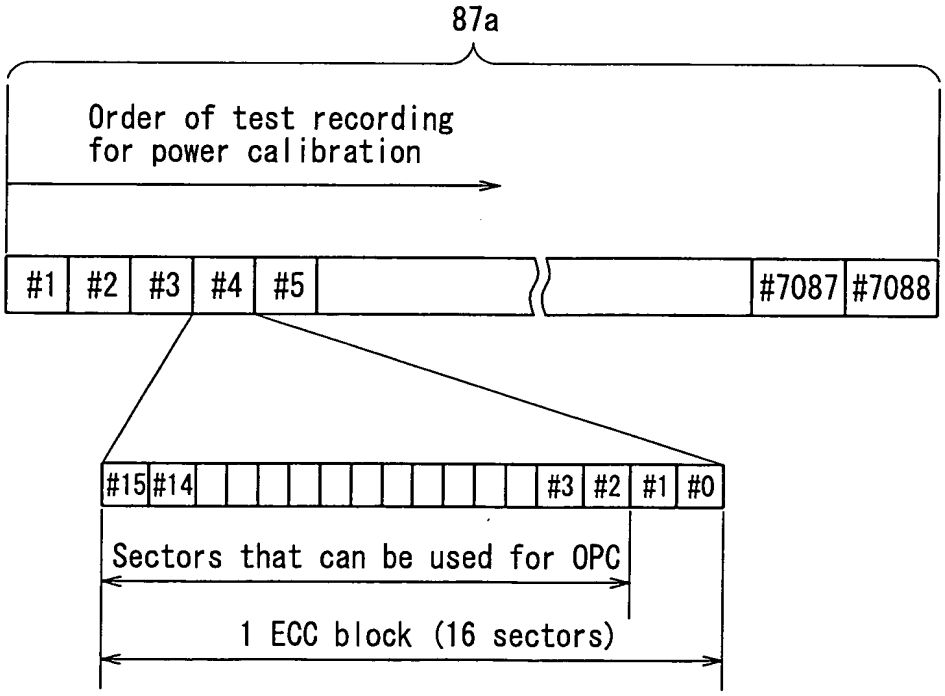

87a
Order of test recording
for power calibration
#1
#2
#3
#4
#5
#7087
#7088
#15
#14
#3
#2
#1
#0
Sectors that can be used for OPC
1 ECC block (16 sectors)

FIG. 13

FIG. 14A

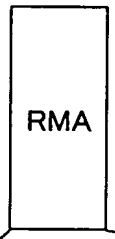


FIG. 14B

FIG. 14C

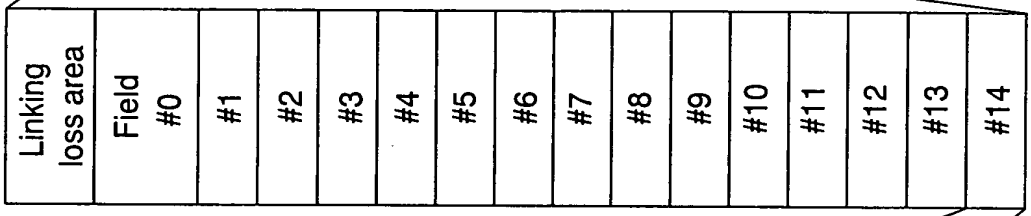


FIG. 14D

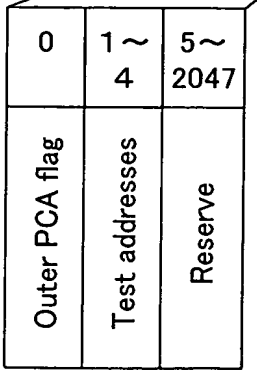
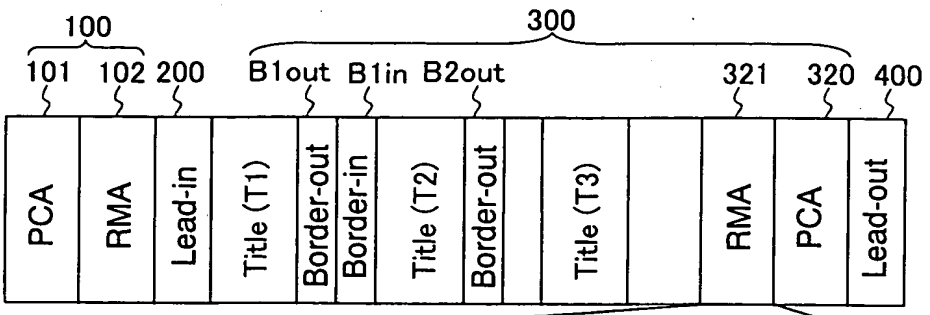


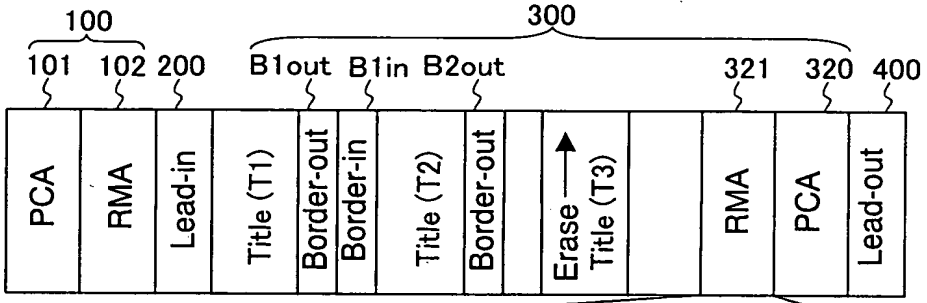
FIG. 15A



RMD Field #1

BP	0 to 127	128 to 255	256 to 383	384 to 511	512 to 2047
Title management information	T1	T2	T3	Blank	Reserve

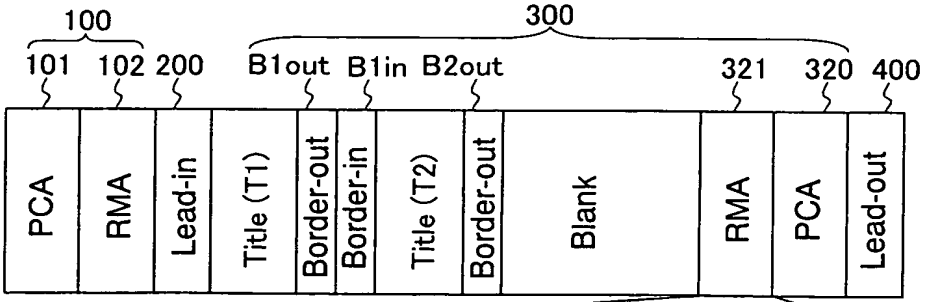
FIG. 15B



RMD Field #1

BP	0 to 127	128 to 255	256 to 383	384 to 511	512 to 2047
Title management information	T1	T2	T3→Erase	Blank	Reserve

FIG. 15C



RMD フィールド#1

BP	0 to 127	128 to 255	256 to 383	384 to 511	512 to 2047
Title management information	T1	T2	Blank	Blank	Reserve

FIG. 16A

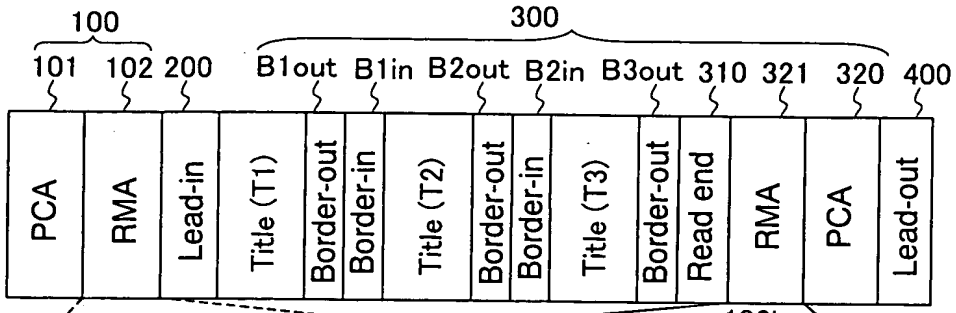


FIG. 16B

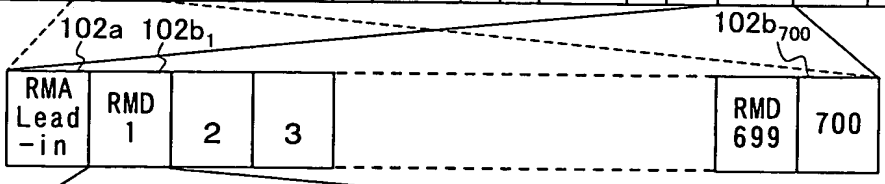


FIG. 16C

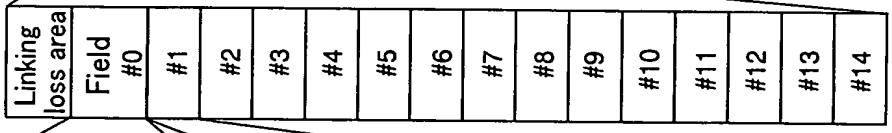


FIG. 16D

#0 #1	#2	#3	#4～#21	#22～#125	#126～#2047
RMD format	Disk status	Reserve	Unique disk ID	Copy pre-pit information	Reserve

FIG. 16F

BP	#0～#127	#128～#255	#256～#383	#384～#511	#512～#2047
Title management information	T1	T2	T3	Blank	Reserve

FIG. 16E

#22	#23	#24	#25～#27	#28	#29	#30～#37	#38～#45	...	#118～#125
Field #1 information	Application code	Disk physical code	Last address	Part Version	Reserve	Field #2 information	Field #3 information	...	Field #13 information

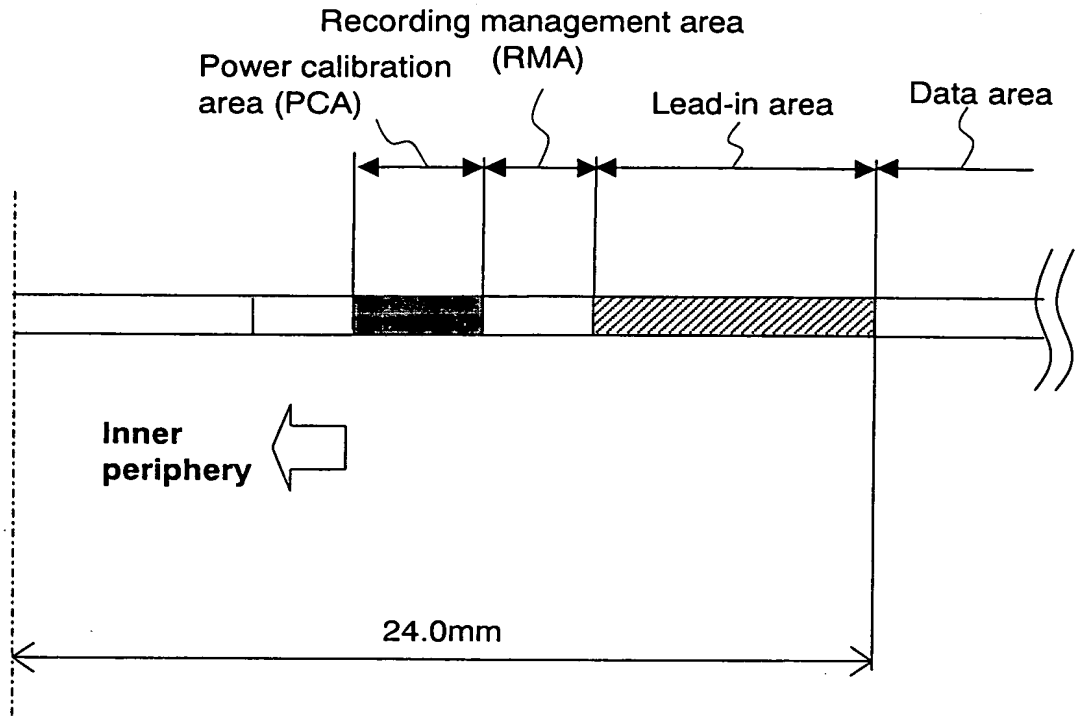

Recording management area
(RMA)
Power calibration
area (PCA)
Lead-in area
Data area
Inner
periphery
24.0mm

FIG. 17

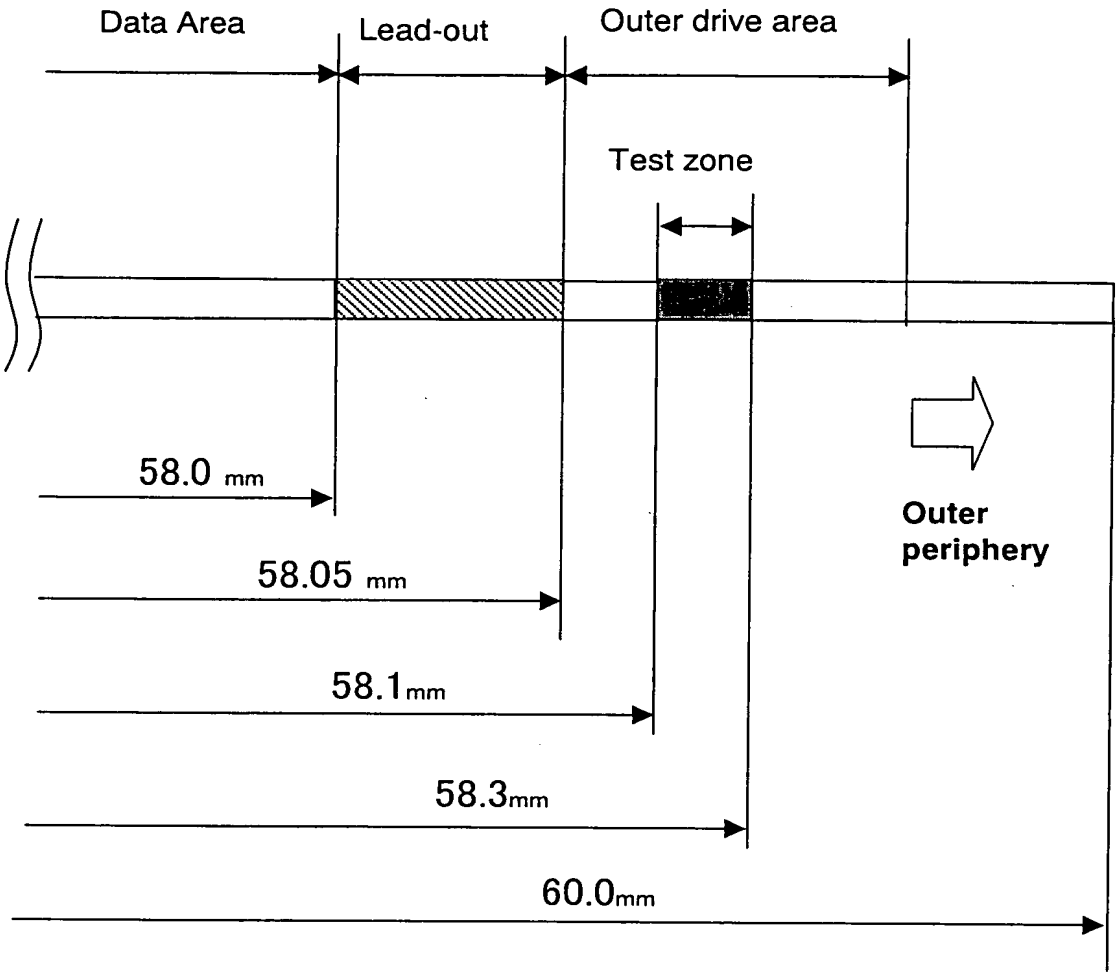

Data Area
Lead-out
Outer drive area
Test zone
58.0 mm
58.05 mm
58.1mm
58.3mm
60.0mm
Outer periphery

FIG. 18